Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of Implementation of Sections 716 and 717 of the Communications Act of 1934, as Enacted by the Twenty-First Century Communications and Video Accessibility Act of 2010 Entertainment Software Association Petition for Class Waiver of Sections 716 and 717 of the Communications Act and Part 14 of the Commission's Rules Requiring Access to Advanced Communications Services (ACS) and Equipment by People with Disabilities	CG Docket No. 10-213

MID-YEAR STATUS REPORT OF
THE ENTERTAINMENT SOFTWARE ASSOCIATION

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INTRODUCTION AND SUMMARY

In December 2016, the Consumer and Governmental Affairs Bureau extended the existing waiver of the Advanced Communications Service ("ACS") rules for video game software until December 31, 2017.[1] In so doing, the Bureau found that "it is both reasonable and in the public interest" to continue the waiver period "to enable video game platform providers and video game publishers to continue innovating, experimenting, and exploring ACS accessibility solutions."[2] The Bureau's Order noted that the Entertainment Software Association ("ESA") may "exercis[e] its right to come back to the Commission at a later time to request another extension of the waiver," and directed ESA to submit a report halfway through the current waiver period to enable the Commission "to better assess the status of and progress made to achieving accessible ACS in video game software."[3]

This report provides the updated information requested by the Order.[4] As discussed below, video game software continues to be eligible for a waiver of the ACS rules because ACS is not the primary purpose of video game software, as evidenced by publishers' marketing of video game features to the public during the current waiver period.

In addition, while ACS accessibility in video games still presents substantial technical challenges, the industry has made meaningful progress on accessibility during the first half of the waiver period. These efforts include adding a new game chat transcription functionality to the

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[1]   *Implementation of Sections 716 and 717 of the Communications Act of 1934, As Enacted by The Twenty-First Century Communications and Video Accessibility Act of 2010, Entertainment Software Association Petition for Class Waiver of Sections 716 and 717 of the Communications Act and Part 14 of the Commission's Rules Requiring Access to Advanced Communications Services and Equipment by People with Disabilities*, Order, 2016 WL 7436819, CG Docket No. 10-213 (CGB Dec. 23, 2016) ("*2016 Waiver Order*").

[2]   *Id.* ¶ 26.

[3]   *Id.* ¶¶ 27-28.

[4]   *See id.* ¶ 27.

software development kit for Microsoft's Xbox One console, enabling game developers to pilot real-time speech-to-text translation as well as text-to-speech reading of typed text in audio game chat. Other accessibility improvements during the waiver period include improvements with respect to core game playing functions.

Finally, and significantly, ESA and its members have conducted outreach and consultation with members of the disability community during the waiver period. ESA and member companies have, for example, met with disability advocates and gamers with disabilities, sponsored a day-long accessibility event hosted by the International Game Developers Association in connection with the 2017 Game Developers Conference, and conducted outreach as part of the 2017 Electronic Entertainment Expo, the largest game expo of the year. ESA and its members are committed to continuing their engagement with the disability community.

I. VIDEO GAME SOFTWARE CONTINUES TO BE ELIGIBLE FOR WAIVER.

The ACS rules contemplate that the Commission may waive ACS obligations for services and equipment that, while capable of accessing ACS, are designed primarily for purposes other than using ACS.[5] When making this determination, one of the factors the Commission considers is the extent to which manufacturers or providers market the equipment or services at issue primarily for their ACS functions.[6] Accordingly, the *2016 Waiver Order* requests updated information on "[t]he extent to which ACS functionality in gaming software is advertised, announced, or marketed to consumers…."[7]

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[5] *See* 47 C.F.R. § 14.5(a)(1)(i)-(ii).

[6] *Id.* § 14.5(a)(2)(ii).

[7] *2016 Waiver Order* ¶ 27.

As the Order recognized last December, the "numerous examples of current marketing materials" for video games provided by ESA "demonstrate[d] that video game software marketing … emphasizes game playing, not ACS."[8] This is still the case today.

As the Commission may be aware, publishers release the vast majority of new video games in the second half of the year.[9] Thus, the marketing material that ESA provided last October continues to be representative of marketing activities for game titles in the first half of 2017.[10] Indeed, publishers are still actively marketing every game described in ESA's 2016 waiver petition. In addition, as illustrated by the materials described below and in **Exhibit A**, other marketing activities in the first half of the current waiver period continue to emphasize game play rather than ACS functions.

Action games. *Phantom Dust* is an action-strategy game released by Microsoft Studios last month that is a remastered version of a cult classic title originally available for the Xbox console.[11] *Phantom Dust* provides a unique "blend of third-person arena combat and collectable card game" that enables players to obtain skills and "unleash a wide array of powers and tactics to defeat … enemies, including orbital particle cannons, flaming swords, barriers of ice, flight, cloaking, attack reflection, and many other abilities."[12] Enhancements made to *Phantom Dust* in 2017 include improved graphics, game play balance, game achievements, and online multiplayer

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[8] *Id.* ¶ 21.

[9] *See, e.g.*, POLYGON, *Why Are So Many Games Released in the Fall and So Few in the Summer?* (May 23, 2014), https://www.polygon.com/2014/5/23/5745278/fall-2014-releases-summer-2014-releases-friends-list ("It seems like every year between September and December all of the games get released.").

[10] *See generally* Petition for Extension of Waiver of the Entertainment Software Association at 2-8 and Exhibit A, 1-20, CG Docket No. 10-213 (filed Oct. 18, 2016) ("2016 Waiver Request").

[11] MICROSOFT, *Phantom Dust* (2017), https://www.microsoft.com/en-us/store/p/phantom-dust/9pcdnbhr11mr.

[12] *Id.*

support.[13] Although *Phantom Dust* supports voice chat, the game's marketing materials do not mention this functionality in the list of features.[14] The game's official press release and trailer focus primarily on the re-release of the popular classic on modern devices and the game's storyline.[15]

Next month, Nintendo will release *Splatoon 2*, an action game for the Nintendo Switch console. In *Splatoon 2*, players control "Inklings," which are characters that use colored ink to claim turf and complete other objectives.[16] *Splatoon 2* will include a setting that allows a player to "lock" various ink color combinations to create game play modes that can be more accessible to gamers with limited or no color perception. The website for *Splatoon 2* features high resolution pictures of Inklings as well as descriptions of game play objectives and other game features.[17] One of the website's pages lists descriptions of "game modes" and various game play tips, including "using voice chat with the smart device app when you're playing online."[18] However, this text appears approximately two-thirds of the way down the page in the same font size as the other marketing text.[19]

Role-Playing games. *Mass Effect: Andromeda* is the latest title in the acclaimed *Mass Effect* series of science fiction action role-playing games developed by BioWare and published

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[13] *Id.*

[14] *See* Exhibits A-6–A-8.

[15] Adam Isgreen, *Cult Classic Phantom Dust Free on Xbox One and Windows 10*, MICROSOFT XBOX WIRE (May 16, 2017), http://news.xbox.com/2017/05/16/phantom-dust-free-xbox-play-anywhere/; Exhibits A-7–A-8.

[16] *See generally* NINTENDO, *Splatoon* 2 (2017), splatoon2.nintendo.com (last visited June 29, 2017).

[17] *See id*.

[18] *See* NINTENDO, *Splatoon* 2, *Game Modes* (2017), splatoon.nintendo.com/game-modes (last visited June 29, 2017).

[19] *Id.*

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by Electronic Arts.[20] The marketing materials for *Mass Effect: Andromeda* invite users to

"[e]mbark on a mission beyond the borders of our known universe," and "[n]avigate the

uncharted reaches of the Andromeda Galaxy to unravel its mysteries, discover vivid alien

worlds, and lead the charge to find humanity a new home among the stars."[21] The game features

a single player mode as well as a cooperative mode in which the user can play the game with

between 2-4 other players.[22] Toward the end of the multiplayer section of the *Mass Effect:*

Andromeda website there is text noting that players should "[p]lay as a team. Stick together,

support each other, and communicate."[23] However, the marketing materials do not specifically

mention the game's support for voice chat.[24]

    Strategy games. *Halo Wars 2* is a real-time strategy game developed by 343

Industries/Creative Assembly and published by Microsoft Studios.[25] *Halo Wars 2* takes place in

the in-game universe of the *Halo* franchise, and enables gamers to construct bases and take

command of Halo units from a birds-eye view of the battlefield.[26] The marketing materials for

Halo Wars 2 highlight features including an "[a]ll-new, [a]ction-packed [s]tory," a new "instant

command" function that "[c]ombin[es] tactical combat with card-based strategy," and the ability

to "[p]lay with or against your friends and the Xbox Live community in up to 3v3 matches."[27]

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[20] ELECTRONIC ARTS, *Mass Effect: Andromeda* (2017), https://www.masseffect.com; Exhibits A-1–A-5.

[21] ELECTRONIC ARTS, *Mass Effect: Andromeda, About* (2017), https://www.masseffect.com/about.

[22] *See* ELECTRONIC ARTS, *Mass Effect: Andromeda, Gameplay* (2017), https://www.masseffect.com/gameplay; Exhibits A-1–A-2 and A-4–A-5 (box art indicating number of simultaneous players).

[23] ELECTRONIC ARTS, *Mass Effect: Andromeda, News* (2017), https://www.masseffect.com/news/multiplayer.

[24] *See* ELECTRONIC ARTS, *Mass Effect: Andromeda* (2017), https://www.masseffect.com; Exhibits A-1–A-5.

[25] MICROSOFT, *Halo Wars 2* (2017), https://www.halowaypoint.com/en-us/games/halo-wars-2; Exhibit A-11.

[26] *See id.*

[27] MICROSOFT, *Halo Wars 2* (2017), https://www.microsoft.com/en-us/store/p/halo-wars-2/c21tdxkrnmhz#.

Microsoft's accessibility website for Xbox notes that a new game chat transcription functionality (described below) piloted by Microsoft is now available in *Halo Wars 2*,[28] but the marketing materials for the game itself do not mention the game's communication features.[29]

In addition to marketing activities, the Commission may also consider the extent to which the product's ACS supports another feature, purpose, or task, as well as the impact that removal of the ACS feature would have when determining whether ACS is the "primary purpose" of a product or service.[30] Accordingly, the Order requests information about "[t]he extent to which ACS functionality is designed to aid game play and the impact that removal of the ACS features would have on the video game play experience."[31]

As the Bureau has previously recognized, "ACS … plays only a peripheral role in video game software," and "the role of ACS as a complement to game play is no more significant today than it was" when the Bureau first granted a Part 14 class waiver for video game software.[32] This has not changed in the first half of the current waiver period.

As the descriptions of console chat functions indicate, the primary purpose of chat is to facilitate activities related to game play, including by aiding in scheduling games, finding other gamers, and sharing game play experiences. For example, the PlayStation 4 Party Chat feature

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[28] MICROSOFT, *Xbox Support, Use Game Chat Transcription on Xbox One* (2017), http://support.xbox.com/en-US/xbox-one/ease-of-access/use-game-chat-transcription ("Game Chat Transcription on Xbox One").

[29] *See* Exhibits A-10–A-12.

[30] *See Implementation of Sections 716 and 717 of the Communications Act of 1934, As Enacted by The Twenty-First Century Communications and Video Accessibility Act of 2010 et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 14557, ¶ 186 (2011).

[31] *2016 Waiver Order* ¶ 27.

[32] *Implementation of Sections 716 and 717 of the Communications Act of 1934, As Enacted by The Twenty-First Century Communications and Video Accessibility Act of 2010, Entertainment Software Association Petition for Class Waiver of Sections 716 and 717 of the Communications Act and Part 14 of the Commission's Rules Requiring Access to Advanced Communications Services and Equipment by People with Disabilities*, Order, 30 FCC Rcd. 10016, 10022, ¶¶ 16-17 (CGB 2015) ("*2015 Waiver Order*").

lets a user voice chat and text chat with gamers the user has added to a Friend list as well as other players, "join a game," and "share game screens and gameplay with others…."[33] Similarly, Microsoft's Xbox One messaging provides functionality to "send messages to friends, people you recently played games with, or other people who have gamertags."[34]

With respect to voice and text chats that take place within games themselves, such communications are self-evidently not the primary purpose for which the game was created. Indeed, many games, such as turn-based casual games, would experience no impact to the underlying game play from removal of in-game communications. We recognize, though, that in some multiplayer games, communication contributes to the game play experience by helping coordinate activities among players online, just as other non-ACS tools (*e.g.*, map pings, gestures, emotes) do. In any event, as the Bureau previously has noted, "video game software is designed primarily for game play"[35] and not for ACS.

II. THE VIDEO GAME INDUSTRY HAS MADE PROGRESS ON ACCESSIBILITY.

As the *2016 Waiver Order* recognized, "achieving accessibility of ACS in the video game software context poses significant challenges."[36] In order to allow the Commission to develop a "better grasp" of these challenges in the future, the Order requested that ESA's mid-year report include specific information about these challenges with "detailed milestones for their

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[33] PS4, *PlayStation®4 User's Guide, Party, About Parties* (2017), http://manuals.playstation.net/document/en/ps4/party/about_party.html.

[34] MICROSOFT, *Xbox Support, Sending Voice or Text Messages on Xbox One* (2017), http://support.xbox.com/en-US/xbox-one/xbox-live/send-text-messages.

[35] *Implementation of Sections 716 and 717 of the Communications Act of 1934, As Enacted by The Twenty-First Century Communications and Video Accessibility Act of 2010, Consumer Electronics Association, National Cable & Telecommunications Association, Entertainment Software Association, Petitions for Class Waivers of Sections 716 and 717 of the Communications Act and Part 14 of the Commission's Rules Requiring Access to Advanced Communications Services (ACS) and Equipment by People with Disabilities*, Order, 27 FCC Rcd. 12970, ¶ 35 (CGB 2012). *See also 2015 Waiver Order ¶ 17.*

[36] *2016 Waiver Order ¶ 25.*

resolution," as well as the progress that ESA has made on accessibility solutions in the first half of the waiver period.[37]

Even identifying meaningful technical "milestones" for practical and achievable in-game solutions continues to be challenging, in no small part because existing assistive technology solutions have been designed for products and services whose primary purpose is to provide ACS—not for video games or video game platforms.[38] Nevertheless, ESA member Microsoft has now met a substantial commitment made in ESA's prior waiver request—providing APIs for game chat transcription on the Xbox One console. Moreover, the industry is using the waiver period in other ways "to continue innovating, experimenting, and exploring ACS accessibility solutions" tailored to video games, just as the Order predicted.[39] The industry intends to continue these efforts during the remainder of the existing waiver period and beyond.

A. Applying Assistive Technologies to Video Game Software ACS Continues to Present Significant Challenges.

As ESA explained last year, there are several technical challenges to implementing ACS accessibility for video games in an achievable manner.[40] In granting the current waiver, the Order highlighted two sets of challenges in particular.[41]

First, the Order agreed with ESA's assessment that there are "differences between the display technologies used by video games and the displays used for other technologies to which

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[37] *Id.* ¶ 27.

[38] *See* Reply Comments of the Entertainment Software Association at 6, CG Docket No. 10-213 (filed Dec. 14, 2016) ("2016 ESA Reply Comments").

[39] *2016 Waiver Order* ¶ 26.

[40] 2016 Waiver Request at 18-22.

[41] *2016 Waiver Order* ¶ 25.

accessibility features … have been added."[42] The fundamental reason for these differences is

that video games, unlike most other forms of computer software—such as word processors,

email clients, web browsers, and spreadsheets—involve the creation and execution of highly

specialized code.[43] Games require this code because they require computers to perform tasks

beyond accepting inputs and displaying information in a standardized, linear fashion. For

example, game play involves the successful (and simultaneous) integration of numerous

specialized functions, such as physics, animation, graphics (often displayed at highly demanding

resolutions and framerates), audio, object collision detection and response, artificial intelligence,

and customized networking protocols.[44] In other words, "game programming … requires [the

developer] to work with parts of the computer that most programmers never have to deal with."[45]

Games also often account for user input in unique ways.[46] Many games use specialized

controllers that are not used for programs whose primary purpose is to provide ACS or to

perform common computing tasks. And games that do use standard peripherals often process the

inputs from those peripherals to perform highly specialized tasks—such as when the user

manipulates a mouse to look around a rendered world from a first-person perspective or directs

virtual armies on the field—rather than to control a standard pointer to click a button or select a

drop-down menu item. As accessibility expert Mike Paciello has previously observed, many

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[42]   *Id.*

[43]   2016 Waiver Request at 18.

[44]   STACK EXCHANGE INC., *How is Game Development Different from Other Software Development?* (2017),
https://gamedev.stackexchange.com/questions/9074/how-is-game-development-different-from-other-software-
development.

[45]   *Id.*

[46]   *See id.*

games effectively run in a self-contained environment that is conceptually similar to an operating system within the host hardware's operating system.[47]

Most assistive technologies, by contrast, are intended to work with standardized inputs and controls.[48] This is why the accessibility programming guidelines for major operating systems provided to developers specifically recommend the use of standardized user interface ("UI") elements which, as noted, are unlikely to be present in video games.[49] Indeed, because video game "engines do not output any native UI elements" to the operating system, the operating system will perceive a "game rendered by an engine [as] pretty much a single UI component containing a bunch of pixels."[50] This is a primary reason why existing assistive technologies—as well as the assumptions on which those technologies are built—are rarely useful for video game accessibility.

The *2016 Waiver Order* also recognized that "speech-to-text and other emergent assistive technologies have limited use in video games given the current state of the technology" and the

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[47] 2016 Waiver Request at 18 (citing Declaration of Mike Paciello ¶ 7, attached as Exhibit B to 2016 Waiver Request).

[48] *See, e.g.*, Petition of the Entertainment Software Association for Partial Extension of Waiver at Exhibit B, Declaration of Mike Paciello ¶ 5(c), CG Docket No. 10-213 (filed May 22, 2015).

[49] *See, e.g.,* MICROSOFT, *Microsoft Active Accessibility, Getting Started* (2017), https://msdn.microsoft.com/en-us/library/windows/desktop/dd318094(v=vs.85).aspx ("Active Accessibility relies on Windows technology and can be used in conjunction only with Windows-based controls…"); APPLE INC., *Making Your iOS App Accessible* (Feb. 16, 2012), https://developer.apple.com/library/content/documentation/UserExperience/Conceptual/iPhoneAccessibility/Making_Application_Accessible/Making_Application_Accessible.html (observing that, while "standard UIKit controls and views are automatically accessible," "custom views that display information or with which users need to interact" are not); GOOGLE INC., *Android Developers, API Guides, Accessibility Developer Checklist* (2017), https://developer.android.com/guide/topics/ui/accessibility/checklist.html (advising developers to "[u]se Android's built-in user interface controls whenever possible, as these components provide accessibility support by default").

[50] Ian Hamilton, *The Rapidly Changing Landscape of Accessibility for Blind Gamers*, GAMASUTRA BLOGS (May 15, 2017), http://www.gamasutra.com/blogs/IanHamilton/20170515/298020/The_rapidly_changing_landscape_of_accessibility_for_blind_gamers.php.

characteristics of in-game speech.[51] In other words, ACS challenges exist not only because of

technologies unique to video games, but because of how players use these technologies. ESA

has identified five sets of challenges in the latter category that would need to be overcome to

implement chat capabilities in a practical and achievable manner.

First, game play increases speech disfluency, *i.e.*, breaks, interruptions, unclear

pronunciation, unexpected changes in topics/subject matter, and other irregularities in speech.[52]

This is because people playing video games are reacting to actions in the game (which often

occur rapidly and unpredictably), and engage in emotional speech such as yelling and speaking

faster than normal.[53] Second, gamers often use game-specific terms or slang.[54] Third, typical

environmental game play conditions include varying acoustic headset quality and distance from

microphones, music and other non-speech audio in the background, and talking while eating.[55]

Fourth, game chat often takes place when there are multiple people present, speaking over one

another.[56] Each of these factors alter speech in ways that make it harder to recognize, thereby

affecting transcription accuracy. Finally, there is an inherent lag time for transcribing audio,

which matters far more in the game context than in non-game conversations.[57]

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[51]   *2016 Waiver Order* ¶ 25.

[52]   2016 Waiver Request at 20 (citing Daniel Palacios-Alonso et al., *Spontaneous emotional speech recordings through a cooperative online video game*, CENTRO DE TECNOLOGÍA BIOMÉDICA (2015), http://www.ceur-ws.org/Vol-1394/paper_12.pdf); 2016 ESA Reply Comments at 5-6.

[53]   *See id.*

[54]   *Id.*

[55]   *Id.*

[56]   *Id.* at 20-21 (citing IBM RESEARCH, *Multi-talker Speech Separation and Recognition*, http://researcher.watson.ibm.com/researcher/view_group.php?id=2819).

[57]   *Id.* at 21 (citing Matthew W.G. Dye, et al., *Increasing Speed of Processing with Action Video Games* at 1, NIH, CURRENT DIRECTIONS IN PSYCHOLOGICAL SCIENCE (Dec. 2009), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2871325/). In addition, end-to-end internet service may introduce lag.

B.   The Industry Has Made Progress on Accessibility.

Notwithstanding all of the challenges ESA has identified, the industry is making progress

towards developing accessibility solutions. As ESA noted last year, Microsoft has undertaken

the significant task of developing platform-level speech-to-text, and text-to-speech, functionality

for games that run on Xbox One or desktop Windows.[58] Microsoft has now provided an update

to the Xbox software development kit for the Xbox One console to enable game developers to

pilot real-time text transcription of audio game chat using speech recognition to transcribe voice

to text, and to offer gamers the option of having text that they type read aloud as a synthesized

voice into audio game chat.[59]

On March 15, Microsoft began offering this functionality in *Halo Wars 2*, a new real-

time strategy game available for Xbox One and Windows 10 PCs.[60] Although an early review

observed that the functionality is not perfect [61]—unsurprising given the inherent challenges in

applying speech-to-text and other emergent accessibility technologies to gaming environments—

gamers have expressed enthusiasm for the potential of this new feature, characterizing it as

"quite cool,"[62] and an "innovat[ive] new idea[]."[63] Now that this development kit is available,

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[58]   *See* 2016 ESA Reply Comments at 7.

[59]   Game Chat Transcription on Xbox One; Rachel Kaser, *Microsoft Brings Text-to-Speech (and Vice Versa) to PC and Xbox One*, THE NEXT WEB (Mar. 2017), https://thenextweb.com/gaming/2017/03/16/microsoft-brings-text-speech-vice-versa-pc-xbox-one/.

[60]   *See* Evelyn Thomas, *Game Chat Transcription Feature Available Today in Halo Wars 2 for Xbox One and Windows 10 PCs*, MICROSOFT ACCESSIBILITY BLOG (Mar. 15, 2017), https://blogs.msdn.microsoft.com/accessibility/2017/03/15/game-chat-transcription-feature-available-today-in-halo-wars-2-for-xbox-one-and-windows-10-pcs/.

[61]   *See, e.g.*, Matt Brown, *How to use the new Game Chat Transcription for Xbox One and Windows 10*, WINDOWS CENTRAL (Apr. 20, 2017), https://www.windowscentral.com/how-use-game-chat-transcription-xbox-one-and-windows-10.

[62]   Phil Spencer (@XboxP3), TWITTER (Mar. 15, 2017), https://twitter.com/XboxP3/status/842252888579563520 (showing various gamers' responses to his tweet about the functionality).

[63]   *Id*.

game developers have the ability to evaluate it and choose whether to implement the feature in their games.[64]

Microsoft has also released additional accessibility updates to its Xbox One console since the start of the waiver period. These include a new "Copilot" feature introduced in March that allows gamers to link two controllers to perform the functions of a single controller, enabling a number of new options for individuals who require unique configurations to manipulate controls, such as hand-and-chin, hand-and-foot, etc.[65] An April console update included enhancements to the Narrator screen reader and Magnifier,[66] as well as adding custom rumble settings on standard controllers.[67]

Another console manufacturer is exploring solutions for player-to-player communications that can leverage accessibility resources on other platforms. As an alternative approach to in-game chat, Nintendo intends to offer player-to-player communications through a smart-device app that will launch in the coming weeks. The app will provide a "matchmaking" service for Nintendo Switch multiplayer games that allows players to invite other players from their Nintendo Switch or social media friend list to participate in matches.[68] For *Splatoon 2*, for example, once players have been joined into a game on the console, the app will provide near

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[64]   *See* 2016 ESA Reply Comments at 7.

[65]   MICROSOFT, *Xbox Support, Xbox One Operating System Versions and System Updates* (2017), http://support.xbox.com/en-GB/xbox-one/console/system-update-operating-system ("Xbox One System Updates"); Scott Henson, *First Wave of New Xbox Update Features Ship to Select Xbox Insiders Today*, MICROSOFT XBOX WIRE (Jan. 23, 2017), http://news.xbox.com/2017/01/23/xbox-creators-update-preview/ ("Xbox Update Preview").

[66]   Xbox One System Updates.

[67]   Xbox Update Preview.

[68]   The app will require users to subscribe to a new online service that Nintendo will also be launching shortly that will enable owners of Nintendo Switch consoles to play cooperative and competitive games. *See* NINTENDO, *Switch Online Service* (2017), http://www.nintendo.com/switch/online-service/.

real-time voice chat functionality.[69] Because the app will use a smart-device application to enable player-to-player communications, it will be able to take advantage of a number of the built-in accessibility features, APIs, and other accessibility resources provided natively on these platforms, where appropriate for the game context.[70]

As ESA has explained, providing accessibility for in-game multi-party chat functionality is challenging.[71] Accordingly, as with technologies offered using a single platform, it may not be achievable for the ACS functions of the service to meet each of the performance objectives set forth in the ACS rules. The success of this two-device approach for Nintendo will depend upon a variety of factors, including consumer reception of this feature and whether other publishers incorporate it into their games for the Nintendo Switch platform. But Nintendo's approach provides a creative example of how companies are using the current waiver period for "innovating, experimenting, and exploring ACS accessibility solutions," just as the Commission envisioned when it granted the waiver request six months ago.[72]

Another example is game developer Mojang, which has recently added a text-to-speech accessibility feature for its extremely popular world construction game *Minecraft*.[73] This functionality, added in version 1.12 earlier this month, "toggles a text-to-speech engine that

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[69]   *See* MY NINTENDO NEWS, *Nintendo Talks Splatoon 2 Online Voice Chat* (May 27, 2017), https://mynintendonews.com/2017/05/27/nintendo-talks-splatoon-2-online-voice-chat/.

[70]   *See, e.g.*, GOOGLE INC., *Android Developers, API Guides, Accessibility* (2017), https://developer.android.com/guide/topics/ui/accessibility/index.html; APPLE INC., *Apple Developer, Accessibility on iOS* (2017), https://developer.apple.com/accessibility/ios/.

[71]   *See* Section II.A., *supra.*

[72]   *See 2016 Waiver Order* ¶ 26.

[73]   MICROSOFT, *Accessibility in Minecraft* (2017), https://minecraft.net/en-us/accessibility/.

automatically reads player chat messages," and also provides an option to read system messages in addition to player chat content.[74]

Finally, as the *2016 Waiver Order* recognized, "improvements in accessibility have been made with respect to … game playing function[s]."[75] As anticipated, ESA members have continued these efforts during the waiver period. For example, *MLB: The Show*, a Major League Baseball game published by Sony Interactive Entertainment ("SIE"), has previously been recognized for its game play accessibility options including "visual accessibility, not requiring sound to play, and letting gamers choose which positions they're in control of." [76] According to AbleGamers, the most recent version of the franchise, *MLB: The Show 2017*, "continues to deliver accessible excellence."[77] In addition to "the usual accessibility options [users] will expect from The Show," the most recent version offers additional configuration modes for gamers with limited mobility, as well as features that provide "players the opportunity to control their favorite players and franchise without the need of any timing or accuracy demands."[78]

Mario Kart 8 Deluxe for the Nintendo Switch includes two new features—Smart Steering and Auto Accelerate—that support accessibility by facilitating game play by individuals with limited manual dexterity.[79] These features help drivers effectively navigate race tracks by

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[74] GAMEPEDIA, *Minecraft 1.12* (June 13, 2017), http://minecraft.gamepedia.com/1.12.

[75] *2016 Waiver Order* ¶ 24.

[76] Mat Paget, *Rocket League, MLB: The Show Named Most Accessible Games of 2015*, GAMESPOT (Jan. 21, 2016), https://www.gamespot.com/articles/rocket-league-mlb-the-show-named-most-accessible-g/1100-6434050/.

[77] Joseph Giampapa, *MLB The Show 17 Continues to Deliver Accessible Excellence*, ABLEGAMERS (Apr. 24, 2017), http://www.ablegamers.org/mlb-the-show-17-continues-to-deliver-accessible-excellence/.

[78] *Id.*

[79] *See* MY POTATO GAMES, *Mario Kart 8 Deluxe is More Accessible to Everyone* (Apr. 30, 2017), https://mypotatogames.com/mario-kart-8-deluxe-accessible-everyone/.

providing automatic steering assistance to help avoid walls and stay on course, and by eliminating the need to separately control the vehicle acceleration function.[80]

Injustice 2, a fighting game published by Warner Bros. and released in May 2017, recently received praise from the accessibility group Disabled Accessibility for Gaming Entertainment Rating System ("D.A.G.E.R.S.") for its features that assist players with physical limitations. In addition to fully re-mappable controls, the game permits customization of characters so that "players with fine motor disabilities will be able to tailor the experience around their physical limitations."[81]

D.A.G.E.R.S. also recently praised *Resident Evil 7*, developed and published by Capcom, for its customizable controls, which allow players to "invert the trigger buttons … and the control stick buttons" and "swap" the left and right control sticks (a feature that the game reviewer notes is the "sole reason" he was able to play the game). D.A.G.E.R.S. notes that *Resident Evil 7* also includes an aim assist option that provides for an "easier combat experience," "a variety of accessibility options" for colorblind players, and "reliable subtitles," as well as "an icon that can be switched on in order to let deaf players know of background noises."[82] In ESA's various interactions with Telecommunications for the Deaf, Inc. ("TDI") and students at Gallaudet University over the past year, we learned that there is a strong desire for games to include visual notification of important sound effects and background noises. This feature helps address that concern.

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[80]   Ethan Gach, *Little Girl Finally Gets to Play Mario Kart 8 Thanks to Smart Steering,* KOTAKU (Apr. 30, 2017), http://kotaku.com/little-girl-finally-gets-to-play-mario-kart-8-thanks-to-1794783080.

[81]   D.A.G.E.R. SYSTEM, *Disability Game Review: Injustice 2* (May 24, 2017), http://dagersystem.com/all-review-list/disability-game-review-injustice-2/.

[82]   *Id.*, *Disability Game Review: Resident Evil 7* (Mar. 31, 2017), http://dagersystem.com/all-review-list/disability-game-review-resident-evil-7/.

Finally, the PC versions of Ubisoft's *Ghost Recon: Wildlands*, a tactical action game, and *For Honor*, a fighting game, include remappable controls.[83] In addition, *Ghost Recon: Wildlands* offers gamers adjustable audio settings.[84]

III. THE VIDEO GAME INDUSTRY HAS ENGAGED WITH THE DISABILITY COMMUNITY, AND WILL CONTINUE TO DO SO.

The *2016 Waiver Order* also requested information about the disability-related organizations with whom ESA and its members have consulted during the first half of the waiver period, as well as the video game industry's future plans for outreach, consultation, and engagement.[85] ESA and its members have already engaged in outreach and consultation in 2017, and are committed to continuing to do so.

First, as ESA indicated in its reply comments last year, it has been actively exploring opportunities for "game jams" focused on in-game communication and ways to make it more accessible, including for gamers who are deaf or hard of hearing.[86] ESA has since sponsored an accessibility-related challenge for Global Game Jam 2017.[87] The challenge encouraged developers to create a "multiplayer game that requires communication between players, without

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[83] *See* NickInUHD, *Ghost Recon Wildlands Beta PC Controls & Settings*, YOUTUBE (Feb. 3 2017), https://www.youtube.com/watch?v=9apE-fZrF5Q (for remappable controls on PC for *Ghost Recon: Wildlands*) ("Ghost Recon Wildlands PC Remappable Controls"). *See* Mike Suskie, *For Honor Review*, GAMECRITICS (Feb. 23, 2017), https://gamecritics.com/mike-suskie/for-honor-review/ (for remappable controls on PC for *For Honor*).

[84] These audio settings enable the gamer to modify the relative volume of voice, music, special effects, microphone volume, and squad volume, which may help those who are hard of hearing to amplify certain game elements. *See* Ghost Recon Wildlands PC Remappable Controls.

[85] *2016 Waiver Order* ¶ 27.

[86] 2016 ESA Reply Comments at 8-9 and n.40.

[87] *See generally* Global Game Jam (Jan. 2017), http://globalgamejam.org.

relying on text or voice."[88] Over 120 development teams joined ESA's challenge, and several

teams developed code for games using alternative communication strategies.

In addition, on February 27, Microsoft, SIE, and ESA, among others, co-sponsored an

accessibility event hosted by the International Game Developers Association in conjunction with

Game Developers Conference.[89] The day-long event featured discussions on a range of

accessibility topics, and brought together industry representatives, accessibility advocates, and

the developer community. The agenda included presentations from individuals with disabilities

as well as ESA members on a number of aspects of inclusive game design, such as best practices

for subtitles, the role of audio in game accessibility, experiences of blind gamers, and gaming

with limited manual dexterity.[90]

On March 8, ESA met with TDI, the director of Gallaudet's Technology Access Program,

and a Gallaudet student who is an avid gamer to discuss inclusive design for gamers who are

deaf and hard of hearing. This meeting included discussions related to accessible chat, subtitles,

and the role of audio in games, as well as deaf gamers' experiences related to online interactions

with other players.

Finally, ESA has conducted outreach as part of its annual Electronic Entertainment Expo

("E3") in Los Angeles. On June 15, a representative from TDI and a student from Gallaudet

University attended E3, as ESA's guests, and met with ESA staff and representatives from

various game publishers and platform providers. ESA and several of its members learned more

about their game play experiences, the challenges they face, and ideas for improved accessibility

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[88]   Global Game Jam, *And the GGJ17 Diversifiers are…* (Jan. 2017), http://globalgamejam.org/news/and-ggj17-diversifiers-are.

[89]   GAconf (Feb. 27, 2017), http://www.gaconf.com.

[90]   GAconf, *Schedule* (Feb. 27, 2017) http://www.gaconf.com/schedule/.

from the various activities planned during the day. In addition, an informal meet up with other deaf gamers attending E3 provided further opportunities to connect and share experiences.

Individual members have also engaged directly with the disability community during the waiver period. For example, SIE hosted an accessibility event and meetings on May 18, 2017 to commemorate Global Accessibility Awareness Day.[91] The event featured opening remarks by Shawn Layden, the CEO of Sony Interactive Entertainment America and Chairman, World Wide Studios, as well as discussions with blind gamer Brandon Cole (@superblindman on Twitter), accessibility specialist Josh Straub, the editor-in-chief of D.A.G.E.R.S., and Mark Barlet, the founder of AbleGamers. Other senior Sony executives attended as well. The event featured demos to simulate playing games with different disabilities (vision, mobility, etc.), with and without accessibility features turned on. Another demo showcased the PlayStation 4's accessible communication functions. Over 100 people attended the various presentations and meetings, in which guests provided SIE with insights and suggestions for improving accessibility features. SIE also met separately with TDI during E3 in June.

Also in May, Microsoft hosted its 7th annual Ability Summit, a day-long event to foster disability inclusion and accessibility.[92] This summit was attended by Microsoft employees and external guests, who shared their experiences as people with disabilities and accessibility ambassadors, and included a session on Xbox accessibility features. On June 27, Microsoft hosted an event bringing together members from the video game and disability community such

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[91] *See, e.g.*, Karen Auby (@karenauby), TWITTER (May 18, 2017), https://twitter.com/karenauby/status/865269611570151424; *id.*, https://twitter.com/karenauby/status/865268751645659137; *id.*, https://twitter.com/karenauby/status/865263687141019648 (Tweets from Karen Auby, PlayStation Director of Corporate Communications).

[92] Jenny Lay-Flurrie, *Empowering a More Accessible and Inclusive World*, MICROSOFT BLOG (May 18, 2017), https://blogs.microsoft.com/on-the-issues/2017/05/18/empowering-more-accessible-inclusive-world/.

as Ian Hamilton (a game accessibility expert and consultant), Sightless Kombat (an expert gamer who is blind), and Josh Straub (D.A.G.E.R.S.), together with Microsoft game and platform developers, designers, and producers, on providing more inclusive experiences for gamers.

On June 23, Ubisoft, a member of ESA and French game publisher that has released numerous popular titles including *Assassin's Creed* and *Tom Clancy's The Division*, met with CapGame, a French association dedicated to working on accessibility of video games, to discuss ideas for improved accessibility. This meeting took place in connection with an event organized by AFM Téléthon, the French Muscular Dystrophy association.

Blizzard Entertainment's *Overwatch* is a team-based, first-person shooter game. On April 11, 2017, Blizzard hosted a seasonal online gaming event known as "Overwatch Uprising."[93] It was the first Overwatch event to feature subtitle support, which included subtitling of AI character dialog. Blizzard anticipates rolling out subtitle support for other aspects of the *Overwatch* experience in the near future.

Finally, on May 2, 2017, SIE held its PlayStation DevCon 2017, an annual technical conference for PlayStation developers and partners. SIE invited Karen Stevens, a software engineer from Electronic Arts' Tiburon Studio, who presented ideas to PlayStation developers on how to make video games more accessible.

As the *2016 Waiver Order* recognized, moreover, individual ESA members have previously engaged with the disability community online.[94] These engagements continued during the current waiver period. For example, Ubisoft sought online feedback from members of

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[93] IDIGITALTIMES, *'Overwatch' Team 'Passionate' About Adding Subtitle Support, Kaplan Promises* (Apr. 25, 2017), http://www.idigitaltimes.com/overwatch-team-passionate-about-adding-subtitle-support-kaplan-promises-594672.

[94] *2016 Waiver Order* ¶ 25.

the disability community in a March 2017 online survey that addressed, among other things, potential uses of text-to-speech technologies for in-game communication.[95] Other members continue to use social media and online forums to solicit feedback and suggestions on how to make consumers' game play experiences more accessible.[96]

Engagement between ESA and its members with the disability community will continue. Later this summer, SIE and ESA will help co-sponsor TDI's 22nd Biennial Conference on July 27-29.[97] ESA staff will attend the event. In addition, ESA is coordinating with AbleGamers to set up meetings at the Center for Inclusive Play, a new facility in Charles Town, West Virginia underwritten in part by digital accessibility firm SSB BART Group.[98] ESA and its member companies will continue outreach and engagement during the remainder of the waiver period as opportunities arise.

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[95] AudioGames, *Forum, Ubisoft Accessibility Survey* (Mar. 2017), http://forum.audiogames.net/viewtopic.php?id=21365.

[96] *See, e.g.*, Karen Stevens (@ea_accessible), TWITTER, https://twitter.com/ea_accessible?lang=en; MICROSOFT, *Ease of Access Feedback*, https://xbox.uservoice.com/forums/335163-ease-of-access.

[97] TELECOMMUNICATIONS FOR THE DEAF AND HARD OF HEARING, INC., *2017 TDI Biennial Conference*, https://tdiforaccess.org/2017-conference/.

[98] MARKETWIRED, *New AbleGamers Center for Inclusive Play Dramatically Expands Charity's Ability to Support Nation's 33 Million Gamers with Disabilities* (Apr. 26, 2017), http://www.marketwired.com/press-release/new-ablegamers-center-inclusive-play-dramatically-expands-charitys-ability-support-nations-2212094.htm.

Even as it is still entitled to the ACS waiver granted by the Commission, the video game industry has made substantial efforts to improve accessibility and engage with members of the disability community during the first half of the current waiver period. Going forward, the industry will continue to take advantage of the regulatory flexibility afforded by the waiver to experiment and explore inclusivity innovations for video game software.

Respectfully submitted,

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*Counsel for the Entertainment
Software Association*

Exhibit A

Exhibit A-1
Mass Effect: Andromeda Box Art (Xbox One)
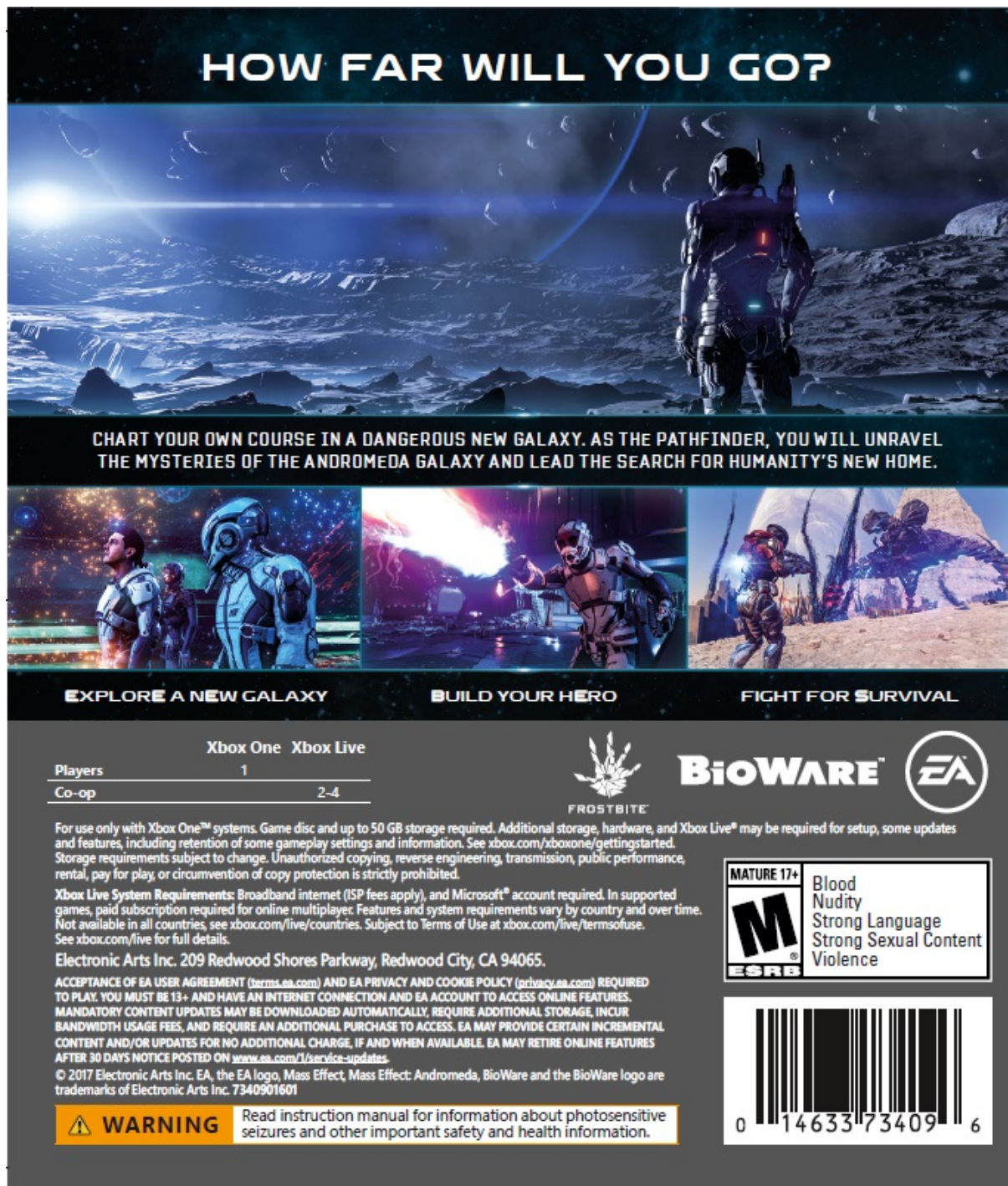
The front of the box for *Mass Effect: Andromeda* for Xbox One features an image of an individual in futuristic-looking armor holding a gun against a backdrop of stars in the night sky. The box also features the ESRB's "M" Rating and logos for BioWare and Electronic Arts.

The back of the box for *Mass Effect: Andromeda* for Xbox One features a large banner that reads "How Far Will You Go?" with a prominent picture of an armored individual looking off into the distance of an alien planet. The box includes three depictions of gameplay, accompanied by the words "explore a new galaxy," "build your hero," and "fight for survival." The box also includes smaller print describing system requirements and legal and health notices, the ESRB "M" rating logo, and various other company logos.

Exhibit A-2
Mass Effect: Andromeda Box Art (PS4)

The front of the box for *Mass Effect: Andromeda* for PlayStation 4 features an image of an individual in futuristic-looking armor holding a gun against a backdrop of stars in the night sky. The box also features the ESRB's "M" Rating and logos for BioWare and Electronic Arts.

The back of the box for *Mass Effect: Andromeda* for PlayStation 4 features a large banner that reads "How Far Will You Go?" with a prominent picture of an armored individual looking off into the distance of an alien planet. The box includes three depictions of gameplay, accompanied by the words "explore a new galaxy," "build your hero," and "fight for survival." The box also includes icons describing game specifications, small print with system requirements and legal and health notices, the ESRB "M" rating logo, and various other company logos.

The front of the box for *Mass Effect: Andromeda* for PC features a close-up of an individual in futuristic-looking armor holding a gun against a backdrop of stars in the night sky. At the top of the box is a large icon that reads "Download Only: No Disc Included." At the bottom is the logo for the ESRB's "M" rating, a logo that says "Digital Download – No Disc Included," logos for BioWare and Electronic Arts, and an explanation that an internet connection is required for product activation.

Exhibit A-3-Cont.
Mass Effect: Andromeda Box Art (PC)
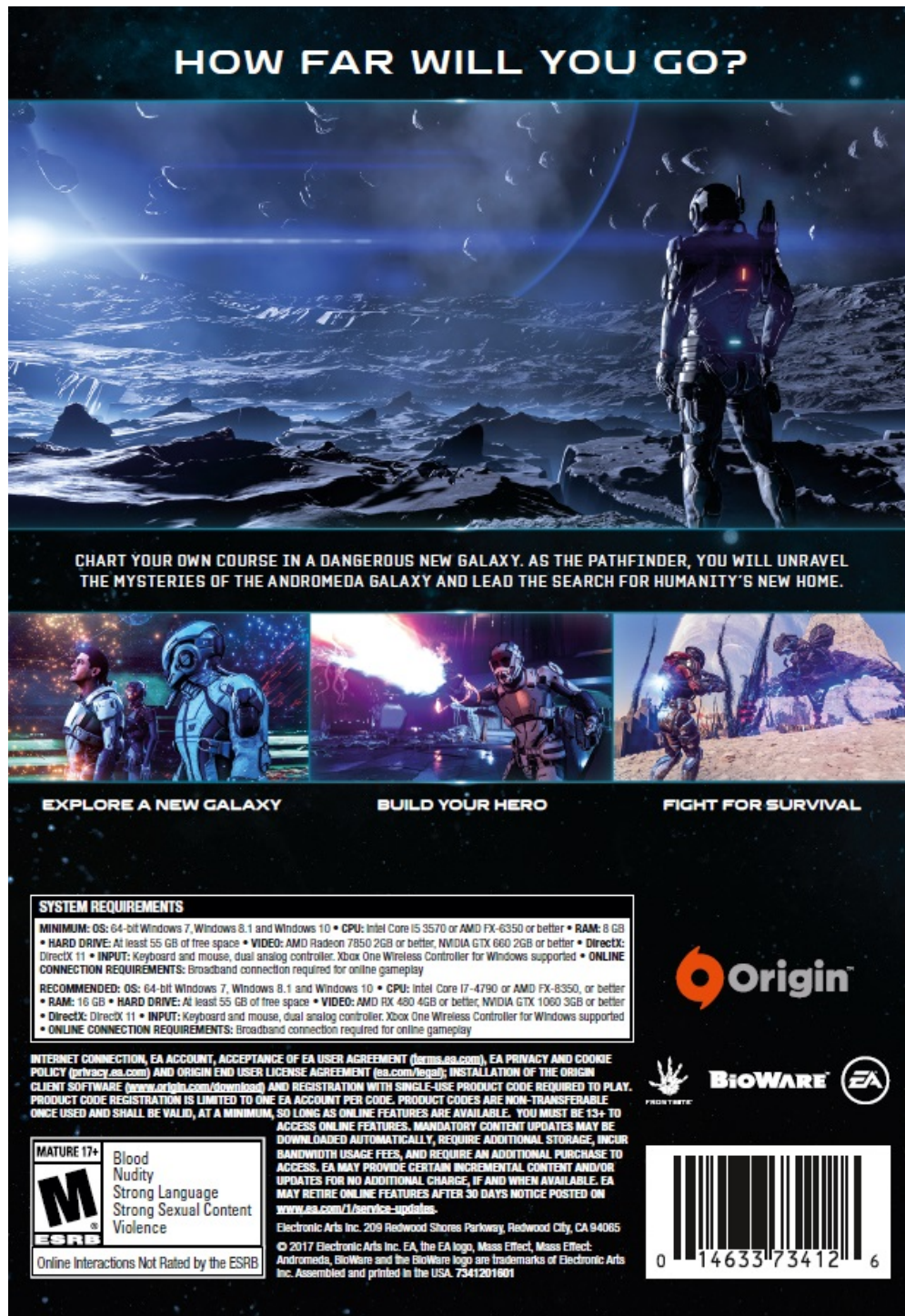
The back of the box for *Mass Effect: Andromeda* for PC features large text that reads, "How Far Will You Go?" The box includes three depictions of gameplay accompanied by the words "explore a new galaxy," "build your hero," and "fight for survival." The box also includes smaller print describing system requirements, as well as legal and health notices, the logo for the ESRB's "M" rating, and various other company logos.

Exhibit A-4
Mass Effect: Andromeda Box Art – Deluxe Edition (Xbox One)

The front of the box for the Deluxe Edition of *Mass Effect: Andromeda* for Xbox One features an image of an individual equipped with futuristic-looking armor and a gun looking towards a distant planet. A spacecraft with smoke billowing out appears to be crashing towards the planet. The words "Deluxe Edition" appear at the top. The logo for the ESRB's "M" rating and logos for BioWare and Electronic Arts appear at the bottom.

The back of the box for the Deluxe Edition of *Mass Effect: Andromeda* for Xbox One features a large banner that reads "How Far Will You Go?," along with three images depicting gameplay and the text "explore a new galaxy," "build your hero," and "fight for survival." The box also highlights four unique gameplay features of the Deluxe Edition, along with text describing the game's unique characters, weapons, outfits, and armor. The back of the box also includes smaller print describing system requirements, legal and health notices, the logo for the ESRB's "M" rating, and various other company logos.

The front of the box for the Deluxe Edition of *Mass Effect: Andromeda* for PS4 features an image of an individual equipped with futuristic-looking armor and a gun looking towards a distant planet. A space craft with smoke billowing out appears to be crashing towards the planet. The logo for PS4 appears prominently at the top of the box, along with large text that reads "Deluxe Edition." The box also features the ESRB's "M" rating and logos for BioWare and Electronic Arts.

The back of the box for the Deluxe Edition of *Mass Effect: Andromeda* for PS4 features a large banner that reads "How Far Will You Go?," along with three images depicting gameplay and the text "explore a new galaxy," "build your hero," and "fight for survival." The box also highlights four unique gameplay features of the Deluxe Edition, along with text describing the game's unique characters, weapons, outfits, and armor. The back of the box also includes smaller print and logos describing game features and system requirements, legal and health notices, the ESRB's "M" rating, and various other company logos.

This screen capture from the Microsoft store features four images of gameplay from *Phantom Dust*, as well as extensive small print describing the premise of the game and various game play features. In the upper right hand corner of the page is the ESRB's rating of "T" for mild language and violence. The top left of the page presents users with an image of the game art, along with a button that says "Get it Now" that allows users to purchase the game. Under that button is small font noting that the game contains in-app purchases and may require certain hardware.

Exhibit A-7
Screenshot of Press Release for *Phantom Dust*
Available at http://news.xbox.com/2017/05/16/phantom-dust-free-xbox-play-anywhere

Cult Classic Phantom Dust Free on Xbox One and Windows 10

By **Adam Isgreen, Creative Director for Phantom Dust** posted on May 16, 2017 at 3:00 pm

67 SHARES

At Team Xbox we put gamers at the center of everything we do and we are driven to build the best platform on which to create and play games. We've heard the feedback and passion from fans about this Xbox classic, and for this re-release on modern devices, we've decided to give it away for free. Yes, free. You can download *Phantom Dust* today on Windows 10 PC and the Xbox One family of devices (via Xbox Play Anywhere) at no cost.

Phantom Dust is such a unique game, that when it was released for the original Xbox in 2004 in Japan, it was hard to classify. We decided at the time to not release it in the United States, although it was already localized in English. A card game plus an action game with quirky Japanese style and a post-apocalyptic setting? Who'd ever heard of such a thing?

Related Stories

Play WWE 2K17 Free This Weekend With Xbox Live Gold Full story...

Full Metal Furies Announced for Xbox One and Windows 10 Full story...

This screen capture from the official online press release for *Phantom Dust* features the large words "Cult Classic Phantom Dust Free on Xbox One and Windows 10" at the top of the page. Under that text is a large image of artwork from the game, which, if a user clicks on, leads to a video trailer for the game. Smaller text under the image focuses on the re-introduction of the classic game on a new platform and Xbox's decision to give the game away for free due to the "feedback and passion from fans about this Xbox classic," which the page notes was released on the original Xbox in 2004.

Exhibit A-8
Screenshots from Official Trailer Video for *Phantom Dust*
Available at http://news.xbox.com/2017/05/16/phantom-dust-free-xbox-play-anywhere

This page shows two screenshots from the official trailer video for *Phantom Dust*, available as part of the official online press release for the game. The first screenshot from the video trailer reads "One of the Cult Classics of the Original Xbox" in large letters. The second screen shot depicts a screenshot of game play (from the point of view of the gamer) in which an armored individual is exploring a building.

Exhibit A-9
Screenshot of The *Splatoon 2* Website
Available at http://splatoon.nintendo.com/game-modes
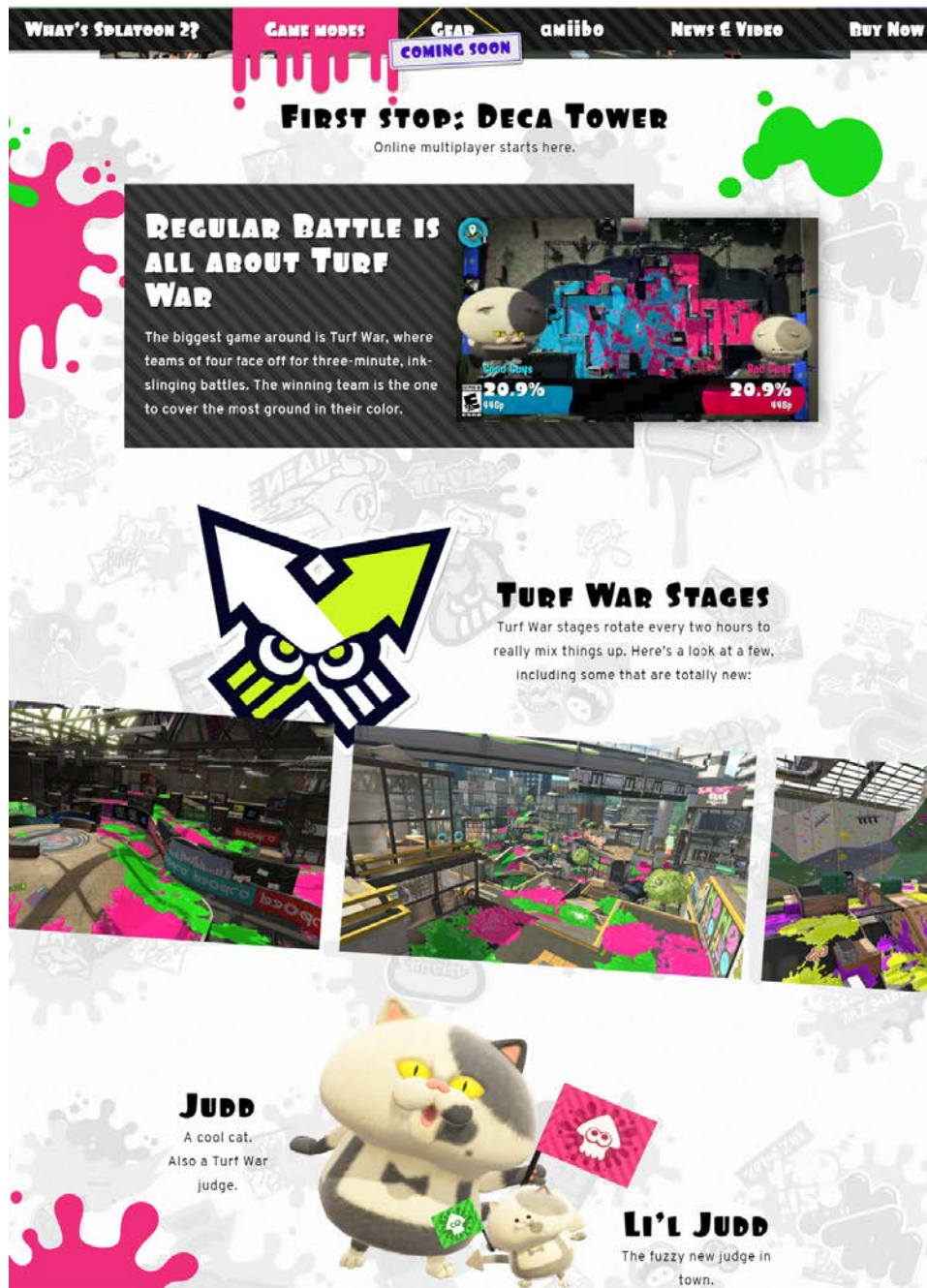
This screen capture of *Splatoon 2*'s official website highlights the game's online multiplayer features and explains the premise of the game's "Turf War" battles, in which the winning team must cover the most ground in the its own ink color. The screen capture also features pictures of new stages and notes that the stages "rotate every two hours to really mix things up." Also pictured is an image of two of the game's characters, as well as an additional screenshot from the game.
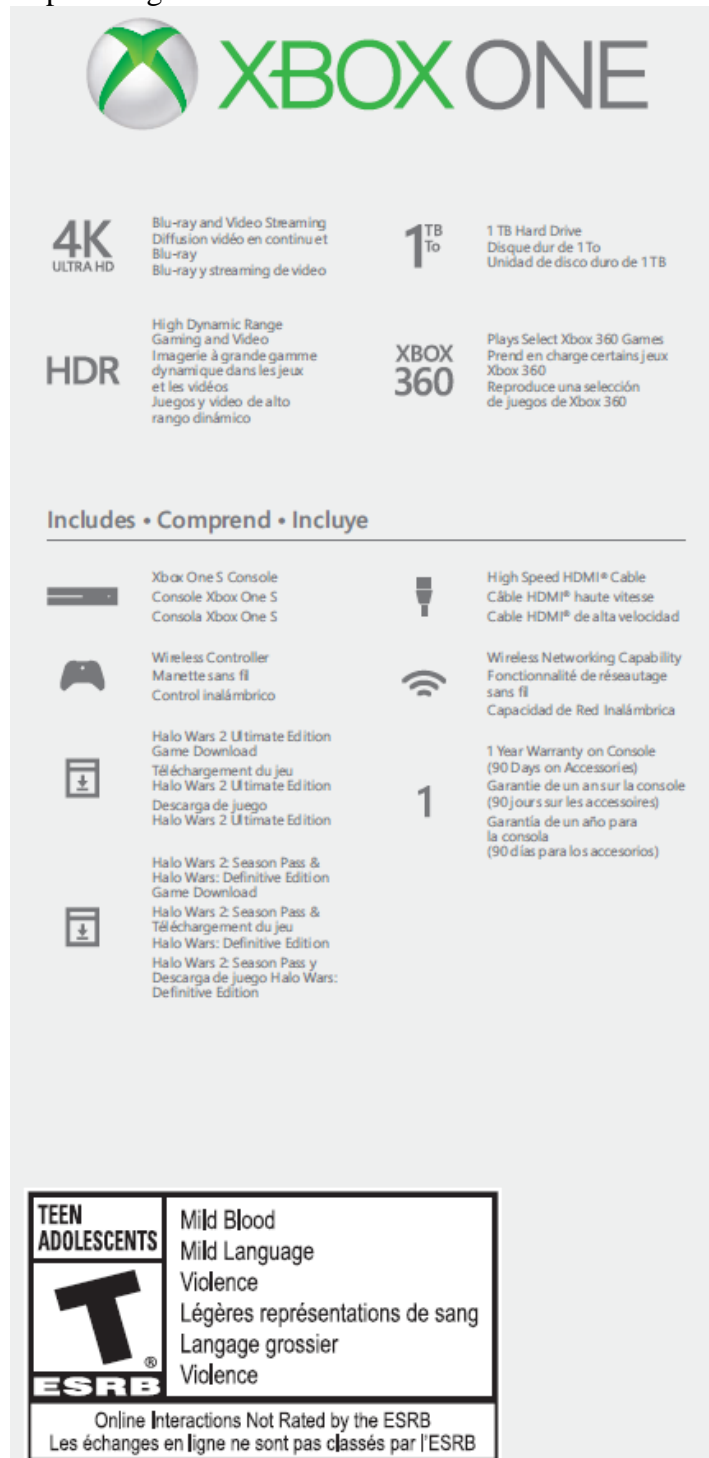
This image depicts a mock-up of the box art for the Ultimate Edition of *Halo Wars 2* packaged with an Xbox One "S" console and controller. The mock-up includes artwork of an armored alien wielding a weapon with other armored aliens in the background. The mock-up also includes a large logo for the Xbox One, along with a picture of the Xbox One "S" console and a controller, and logos that read "4K Blu-Ray," "4K Ultra HD," and "HDR." The mock art also includes a list of specifications (described in the accompanying exhibit on the next page).

Mock-Up Package Art for *Halo Wars 2* and Xbox One "S" Bundle

This image is a close-up of the mock-up of the box art for the Ultimate Edition of *Halo Wars 2* bundled with the Xbox One Console. It lists out a number of specifications for the Xbox One console, including 4K streaming, a 1 TB Hard Drive, High Dynamic Range Gaming, and the ability to play certain Xbox 360 games. Under the specifications, there are a number of icons with small text describing the contents of the box. At the bottom of the page is a large icon with the ESRB's "T" rating.
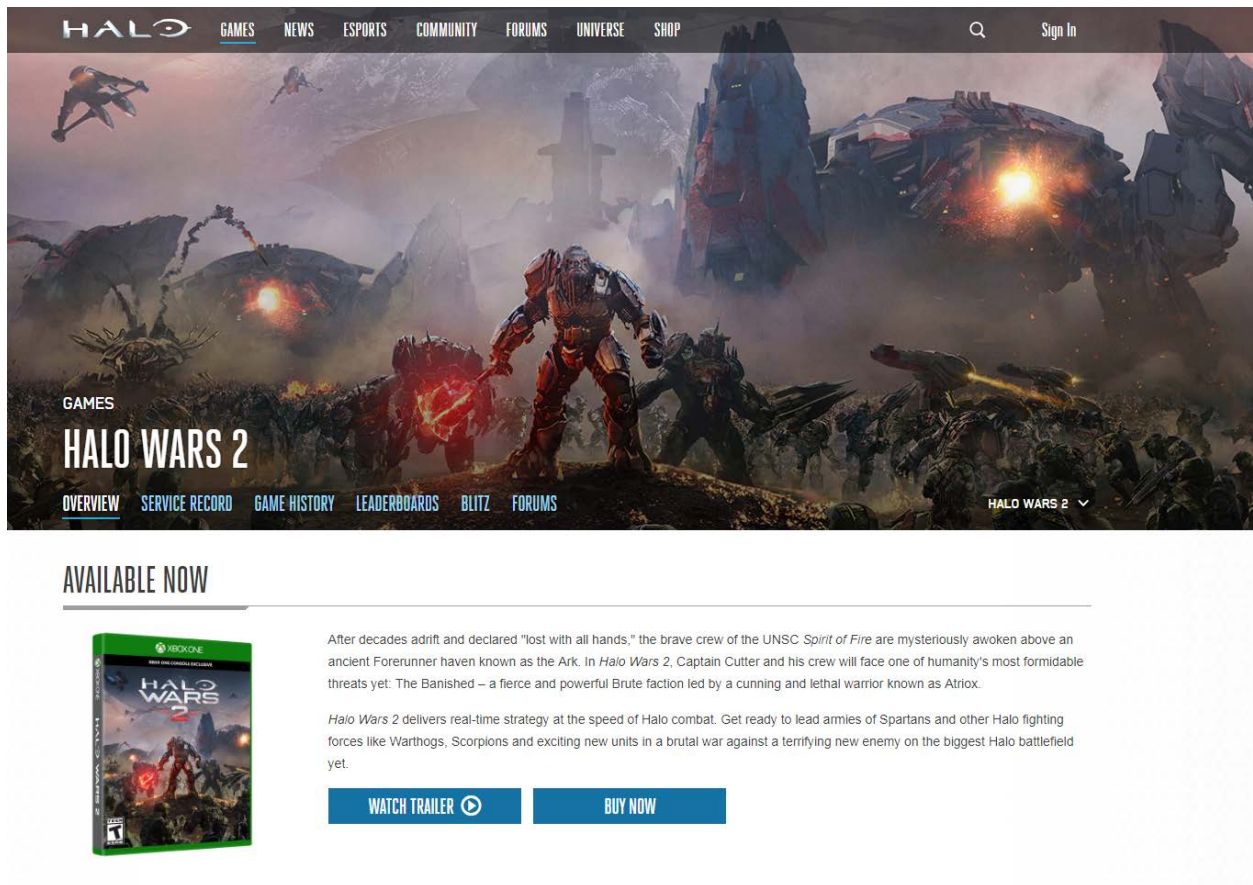
This screen capture of the official *Halo Wars 2* website prominently features artwork from the game, along with the words "Available Now" and a picture of the game's box art. Small text describes the story and premise of the game, in which "the brave crew of the UNSC Spirit of Fire are mysteriously awoken above an ancient Forerunner haven known as the Ark." At the bottom of the page are two large buttons, one that reads "Watch Trailer" and one that reads "Buy Now."

This additional screen capture of the official *Halo Wars 2* website describes various multi-player modes in great detail, including timed game modes, a "death match mode," and an all-new multiplayer "Blitz" mode, which the page notes "is an exciting addition to the Halo Wars series with a unique approach to RTS gameplay."

This postcard of *Halo Wars 2: Awakening the Nightmare* distributed at the E3 gaming convention in June 2017 prominently features artwork of armored monsters wielding weapons in the midst of a fiery destruction. The postcard reads "Digital Expansion, Fall 2017," with smaller text under it that says "new campaign," "new Firefight mode," and "new leaders, units, and maps."

THE ARBITER commands the field with his rage, growing stronger the more enemies he kills.

UNITS AND ABILITIES
· Stasis abilities to freeze your enemies
· Elite-focused roster
· Phantom dropships

COMMANDER JEROME enters combat in a custom Mantis to light up the battlefield.

UNITS AND ABILITIES
· Mastodon APC
· Omega team strike
· Spartan Heroism buffs

CAPTAIN CUTTER can send in powerful orbital support and specialist UNSC units.

UNITS AND ABILITIES
· ODST Drop
· Veteran Training
· Pelican Gunship Support

ATRIOX focuses on a cunning and defensive style, supported by heavy cover and invulnerability powers.

UNITS AND ABILITIES
· Atriox's Chosen
· Invulnerability
· Eradication beams

⭐ Use leader abilities to aid your troops

🔽 Select all units to bring your army to the front line

🏠 Build barriers and turrets to defend your base

📦 Collect resources to build more units

The back of the postcard for *Halo Wars 2: Awakening the Nightmare* distributed at the E3 gaming convention in June 2017 features four images of characters from the game, "The Arbiter," "Commander Jerome," "Captain Cutter," and "Atriox." Smaller text under each character's picture explains each character's "units and abilities." The bottom of the page features four boxes of text that read "Use leader abilities to aid your troops," "Select all units to bring your army to the front line," "Build barriers and turrets to defend your base," and "Collect resources to build more units."